DOCUMENT RESUME

ED 202 823 SP 018 074

AUTHOR Gillett, Max; Gall, Meredith
TITLE The Effects of Teacher Enthusiasm on the At-Task Behavior of Students in Elementary Grades.
PUB DATE 80
NOTE 51p.

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Aptitude Treatment Interaction; Classroom Techniques; Elementary Education; Inservice Teacher Education; Mathematics Instruction; *Student Motivation; Student Teacher Relationship; *Teacher Characteristics; *Teacher Effectiveness; *Teacher Influence; *Teaching Styles
IDENTIFIERS *Enthusiasm

ABSTRACT

Research has shown causal and correlational links between teacher enthusiasm and student achievement, and between student at-task behavior and student achievement. This study tested the causal link between teacher enthusiasm and student achievement, using teaching as an independent variable and at-task behavior as a dependent variable in mathematics classes for students from the first to sixth grades. An experimental group of teachers participated in a two-week training procedure for enthusiasm. Experimental and control group teachers were videotaped both before and after training with observers recording pupils' at-task behaviors on a five-second interval system. The results showed that the teachers who had enthusiasm training showed a significant increase in level of enthusiasm, and that their pupils had a significantly higher level of at-task performance, under both direct and indirect teacher influence. (FG)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
√ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Max Gillett
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ED202823

THE EFFECTS OF TEACHER ENTHUSIASM ON THE AT-TASK BEHAVIOR OF STUDENTS IN ELEMENTARY GRADES

Dr. Max Gillett, Nepean College of Advanced Education, Kingswood, Australia.

Dr. Meredith Gall, University of Oregon, Eugene, Oregon, U.S.A.

The purpose of the study described below was to determine whether training to increase observable level of teacher enthusiasm results in increased at-task behavior of students. Specifically, the investigation was aimed at determining whether students in classes taught by teachers who have received training in enthusiasm exhibit a higher level of at-task behavior than students in classes taught by teachers who have not received this type of training.

Teacher Enthusiasm

Despite the fact that teacher effectiveness probably is the most common focus of educational research, "relatively little is known about effective teaching" (Brophy, 1976). Researchers, however, have continued to search for factors that make some teachers more effective than others. Rosenshine and Furst (1971) reviewed about fifty studies analyzing relationships between teacher behavior and pupil achievement gain, and as a result identified eleven teacher characteristics which correlated consistently across studies with this criterion. Of these eleven teacher characteristics, enthusiasm was selected for the present study.

Elliot Eisner (1974, p.367) refers to qualities that teachers share with actors, especially the ability to "capture the attention and interest of those to whom their message is directed" by "energetic, active, enthusiastic" performance.

Seaberg and Zinsmaster (1972) and Galloway (1974) suggest that a teacher's enthusiasm can be conveyed through facial expressions, movements, postures, speech, gestures, and energy changes. Eisner

SP018074

claims that almost any teacher can increase the ability to manage intelligently such qualitative components as energy, activity, and enthusiasm. He cites the need for researchers in education to investigate qualities such as enthusiasm, and for teacher educators to find ways to foster such qualities. Gage (1977) also identifies a need to investigate the "practical art" of teaching. He suggests that high-inference, qualitative phenomena such as clarity, warmth, and enthusiasm can be redefined and studied as low inference, readily observable teacher behaviors.

Mary Collins (1976) defined teacher enthusiasm operationally as a composite of eight external, observable features of behavior: vocal delivery, eyes, gestures, movements, facial expression, word selection, acceptance of ideas and feelings, and overall energy. These behavioral features are similar to those described by Seaberg and Zinmaster, and by Galloway. They are "qualities of teaching" according to Eisner, and they are typical of the low-inference behaviors mentioned by Gage.

Correlational Studies of Teacher Enthusiasm

Rosenshine (1970) reviewed the pre-1970 research on the relationship between enthusiasm and student achievement. He concluded that such behaviors as 'stimulating', 'energetic', 'mobile', 'enthusiastic', and 'animated' (p. 510), and such variables as frequent movement and gesture, variation in voice, and use of eye contact are related to pupil achievement.

Barr (1948) directed a project to summarize the available research on the measurement and prediction of teacher effectiveness. This project identified thirteen characteristics considered representative of effective teaching. One of these characteristics, 'buoyancy', is similar in many respects to enthusiasm. This characteristic was found to correlate positively with student teacher ratings, inservice ratings, and pupil growth.

Lamke (1951) compared the scores of ten "good" teachers and eight "poor" teachers on Cattell's Sixteen Personality Factor Test.

He concluded that "good teachers are more than usually talkative, cheerful, placid, frank, and quick". They also are above average in their tendencies to be gregarious, adventurous, frivolous, to have abundant emotional responses, (and) strong artistic or sentimental interests" (p. 551).

Ryans (1960) conducted a large-scale study of teaching behaviors and identified three major classroom interaction patterns. One of these patterns, labelled z, was described as "stimulating, imaginative, surgent, v. dull, routine classroom behavior". This pattern correlated positively with student achievement in both elementary and secondary schools.

McCoard (1944) investigated the relationship between certain "speech factors" of teachers and pupil achievement. Forty teachers of seventh and eighth grade classes in rural schools were rated on communication of ideas, communication of emotion, pronunciation levels, and use of and variations in pitch, quality, volume, rate, and phrasing. Ratings on all variables correlated positively and significantly with student achievement.

Koch (1974) identified thirty-five nonverbal behaviors commonly observed in junior and senior high school teachers. These included gestures, hand movements, foot movements, facial expressions, eye language, head movements, lip movements, posture, gait, and use of proximity. Koch cited several studies (Strong, 1965; Hahn & MacLean, 1955; and Davidson & Lang, 1969) which investigated teachers' nonverbal behaviors in connection with communication in the affective domain. He concluded that "in general there is much more positive than negative nonverbal . . . but it is regretted that only 25% of the classes were really enthusiastic and only a similar percentage of teachers communicated interest in students" (p. 432).

Solomon, Bezdek, and Rosenberg (1963) found "clear and expressive" teacher behavior correlates positively with student gains in factual knowledge, and that "energetic and flambuoyant" teacher behavior correlates positively with student gains in comprehension. Energy and clarity are indicators of teacher enthusiasm.

In a follow-up study, Solomon (1966) factor analysed data derived from student ratings of evening college courses. One factor which correlated significantly in a positive direction with these ratings was "Energy vs. Lethargy, Vagueness." This factor contained high positive loadings for the student ratings of the teachers' "enthusiasm", "energy", and "expressiveness". The factors had negative loadings on "monotony" and "dullness".

Wallen (1966) also investigated the relationship between teacher characteristics and student behaviors. He found positive correlations between achievement gain and "the degree to which a teacher is stimulating, interesting, activity-arousing in her pupils". Similar findings were reported by Fortune (1967).

Rosenshine (1968) conducted a study to investigate the relationship between specific teaching behaviors and success in explaining social studies content. He found that teacher movement and gesturing correlated positively with student achievement.

Unruh (1968) analysed the same data by having thirty high school students write descriptors for the teaching they observed on videotapes of the social studies lessons. His results raise some doubts about the stability of the relationship between teacher enthusiasm and student achievement.

A study by Brophy and Evertson (1976) also raises questions about the strength of the relationship between teacher enthusiasm and student achievement. They suggest that teacher enthusiasm is less important for young students than for older ones. The younger students are regarded by Brophy and Evertson as accepting of whatever learning environment they encounter. This contention was investigated in a secondary analysis of the data from the present study, but this analysis is not presented in this paper.

Experimental Studies of Teacher Enthusiasm

In an early experimental study of the effects of speech, Woolbert (1920) investigated the effects of variations in pitch, time, intensity, and quality of teacher speech on listener retention. Tests showed

that extensive variations in all four attributes tended to encourage retention of material. In other early studies Jersild (1938) and Ehrensberger (1945) both investigated the effects of gestures and dramatic presentation techniques (e.g., whispering, pausing, pointing) on recall of statements made during the presentations. Both studies reported that statements were remembered significantly more often when the presentation included gestures than when it did not include gestures.

Coats and Smidchens (1966) compared lectures delivered in dynamic and static modes. The dynamic mode involved much inflection, gesturing, and eye contact, and the content was presented from memory without the use of notes. The results of this study indicated that student recall of the content of the lectures was significantly greater for the dynamic mode of presentation than for the static mode.

In a similar study Wyckoff (1973) found stimulus variation (teacher mobility, gesturing, pausing) to be effective in secondary classes, but not effective in elementary classes. Wyckoff suggested that the frequent variations may have distracted the younger students. He also suggested that the lectures and tests may have been too difficult for the elementary students.

A study by Mastin (1963) suggested that teacher enthusiasm facilitates pupils' learning of facts. Mean student performance on multiple-choice tests was significantly higher in nineteen of the twenty classes when enthusiasm was practiced. Rosenshine (1970) suggested that the outcomes of this study might have been due to the deleterious effect of indifference rather than the positive effect of enthusiasm.

Mary Collins (1976) defined teacher enthusiasm in terms of eight observable behaviors, and studied the effects of training preservice teachers in their use. She randomly assigned a sample of twenty teachers to experimental and control groups. The experimental group was trained to increase their level of enthusiasm in instruction by concentrating on these eight external indicators. Their training included discussions, peer teaching, and microteaching. Data were

gathered by analysing videotapes of lessons given by the experimental and control groups before, immediately after, and three weeks after training. The results indicated that teachers could be trained to increase their levels of enthusiasm as described by her eight behavioral indicators. These findings lend support to Elliot Eisner's view that teachers can increase their capacity to manage such qualitative components of teaching as enthusiasm.

In an extension of Collins' study, Bettencourt (1979) investigated the relationship between teacher enthusiasm and student achievement. He randomly assigned a sample of seventeen teachers to experimental and control groups. The experimental group was trained in enthusiasm using the Collins model. After the experimental group training was completed, all teachers taught a two week module on probability to their classes. Teacher enthusiasm ratings were made by analyzing videotapes of lessons given before the training and after the teaching of the module. Student achievement scores were derived from tests on the content of the instructional module.

Bettencourt's study replicated Collins' finding that teachers can be trained in enthusiasm, but it did not find the hypothesized student achievement gains. These results reinforce the findings of Brophy and Evertson (1976) and Unruh (1968), who raised doubts about the stability of the relationship between teacher enthusiasm and student achievement in younger students.

The study by Bettencourt did not demonstrate student achievement gains concomitant with increases in levels of overt teacher enthusiasm. However, during the experiment Bettencourt and his associates noted that students taught by teachers trained in enthusiasm appeared to exhibit higher levels of attending behavior than did students taught by untrained teachers. Consequently, Bettencourt recommended that future research investigate the relationship between teacher enthusiasm and student attention. The present study is, in part, a response to that recommendation.

At-task Behavior

A conclusion drawn by Berliner (1979) from a literature review conducted in the Beginning Teacher Evaluation study is that

> Elementary school teachers who find ways to put students into contact with the academic curriculum and to keep them in contact with that curriculum while maintaining a convivial classroom atmosphere are successful in promoting achievement. (p. 122)

This statement combines the elements of the present study. It implies effects of teacher enthusiasm in providing "a convivial classroom atmosphere", and states the need for increased levels of attending behavior to keep students "in contact" with their curriculum.

John B. Carroll (1963) based his model of school learning on clusters of variables which relate to time needed for learning and time actually spent in learning. Time needed for learning is a function of student aptitude and quality of instruction provided by the teacher. Time actually spent in learning depends upon time allocations and upon "perseverence-in-learning-to-criterion" (p. 729). Carroll defined the latter variable as a composite of the time the student is willing to spend in the learning activity and the desire to learn. Measurement of this variable comes from "observations of the amount of time the pupil actively engages in learning (p. 732).

In a review of the Carroll model, Benjamin Bloom (1974) described the "time the learner is actively engaged in learning" as "time on task" (p. 685). He stressed that the active engagement of the student can be overt or covert. Students may give the outward appearance of working on learning tasks or may be involved in covert thought processes where active participation is not apparent. Measurement of both overt and covert at-task behavior was included in the present study.

Rosenshine and Berliner (1975) developed further the ideas of Carroll (1963) and Bloom (1974). They identified "a fairly clear and

and consistent pattern" in the research findings. Time on task emerged as "an essential variable for which there is no substitute" (p. 12). According to Rosenshine and Berliner the obtaining of sufficient time on task should be the primary goal of the teacher. Teachers should measure levels of achieved time on task in their classrooms and select procedures to increase these levels. Their review suggested organizational systems for increasing time on task.

Wiley (1973) and Wiley and Harnischfeger (1974) presented a sophisticated model of time on task. In reaction to reports which claimed that schooling is ineffectual (Coleman, 1966; Mosteller & Moynihan, 1972; Jenck et al., 1972), they determined that exposure to instruction is a "highly relevant factor for achievement" (1974, p. 9). They then refined the models of Bloom (1971) and Anderson (1973) to develop the concept of "percent active learning time". This variable is the ratio of time spent in active learning to total usable time. Wiley and Harnischfeger criticized earlier models for measuring time spent in active learning in terms of total allocated time rather than in terms of time actually used for instruction. The dependent variable used in the present study-at-task-behavior is a ratio of time spent on learning tasks to time actually used for instruction.

Harris and Yinger (1977) argued that at-task behavior is a legitimate criterion for effective teaching. They stated that "although we cannot see the psychological processes of learning directly, we can see some physical manifestations" (p. 8) of them in the at-task behavior of students.

Correlational Studies of At-task Behavior

Meyers, Atwell, and Orpet (1968) investigated the relationships between several behavioral variables and achievement. Ratings of attending behavior recorded in kindergarten were compared with scores on the subtests of the California Test of Achievement administered five years later, in grade 5. Of the variables they investigated, attending behavior was the most powerful predictor of academic achievement.

Lahaderne (1968) collected data from four sixth grade classrooms to investigate whether student attentiveness was related to attitudes and achievement. She found strong positive correlations between attention and achievement, but no overall relationship between student attitudes and attention. From these findings Lahaderne concluded that the demands of teachers were a stronger determinant of student attention than were student attitudes of satisfaction or dissatisfaction with school.

Cobb (1970, 1972) conducted two studies on the relationship between specific task-orientated and non-task-orientated behaviors of students and academic achievement in arithmetic in fourth grade classes. His findings indicate that attending behavior is a powerful predictor of arithmetic achievement. He concluded that discrete behaviors (e.g., attention) provide stronger relationships with achievement than do the general response variables (e.g., self-concept) so often used in research on teacher effectiveness.

The stability of the relationship between attentiveness and achievement was demonstrated by McKinney, Mason, Pekerson, and Clifford (1975). They measured twelve student behaviors, including "attending", and achievement at three different points in one year, and found consistently high correlations (approximately .60) over that period. They also concluded that "the child who is attentive, independent, and task orientated in his interaction with his peers is more likely to succeed than the child who is distractible, dependent, and passive in peer-group activities" (p. 202).

Anderson (1973) studied the relationship between at-task behavior and achievement in three junior high school classes in mathematics. Significant positive correlations between achievement and at-task behavior recorded during a one-week unit were found. Time on task accounted for nearly two thirds of the variance in student achievement. Bloom (1974) cited similar studies by Arlin (1973), and Ozcelik (1973) who concluded that measures of at-task behavior (either overt or covert) are "highly predictive of the learning achievement of the student" (p. 686).

Stallings and Kaskowitz (1974) in a study of 150 Follow Through classrooms, correlated classroom activities and student achievement in reading and mathematics in grades 1 and 3. They concluded that engaged time in reading and mathematics correlates significantly with achievement at both grade levels.

As part of the Beginning Teacher Evaluation Study, Tikunoff, Berliner, and Rist (1975) compared "more effective" classrooms and "less effective" classrooms in reading and mathematics in grades 2 and 5. They found that significant gains in student achievement were produced by teachers who allocated time for each activity, who were not "clock-bound", and who provided continuous allocations of time.

Brophy and Evertson (1976) investigated the effects of differences in teaching style on students in grades 1 and 3 in language and mathematics. The data were classified according to the socio-economic status of students. They found that teachers who demanded task-orientated behavior from their students obtained significantly greater achievement gains for both high SES and low SES students than did teachers who did not demand task-orientated behavior.

Campbell (1977) investigated the relationship between at-task behavior and reading achievement in a sample of eighty-one students in six primary classes. Thirty-two of the subjects were classified as Title I students because they rated low in achievement and socioeconomic status. The remaining forty-nine were Non-Title I. Results demonstrated a significant relationship between on-task behavior and reading achievement for Title I students, and a less powerful effect for the other students.

Bloom (1976) reviewed fifteen studies on student attention and found positive correlations between student attention and student gain in all of them. These correlations averaged approximately .52 when the student was the unit of analysis, and .40 when the class was the unit of analysis.

Experimental Studies of At-task Behavior

Correlation studies conducted by Cobb (1970, 1972) demonstrated

a positive relationship between reading achievement and the classroom behaviors of attending, working, volunteering, and reading aloud. In a subsequent study Cobb and Hops (1973) used a group of eighteen low achieving first graders (12 experimental and 6 control) to test experimentally the relationship between these "survival skills" and achievement. A training intervention was used to increase the specified at-task behaviors of students in the experimental group. Results indicate that experimental group students made significant gains in these "survival" behaviors and also in achievement relative to control group students.

This study was one of a series of five experimental studies conducted at the Center at Oregon for Research in the Behavioral Education of the Handicapped (CORBEH). The studies (Hops & Cobb, 1973; Hops & Cobb, 1974; Walker & Hops, 1976; Greenwood, Hops, & Walker, 1977) evaluated the Program for Academic Survival Skills (PASS), a teacher training program for increasing appropriate student behaviors in the classroom. In four of the five experiments the subjects were low in both survival skills and reading achievement. The fifth study (Hops & Cobb, 1973) examined entire classes of typical primary students.

Results of these experiments showed a significant functional link between increases in specific student at-task behaviors and achievement gains in reading for first grade students, but not for second graders or third graders. Greenwood and his colleagues (1977) suggested that these differences might be developmental (younger students might be more responsive to the reinforcement procedures used in the program), or related to the different achievement measures used in different grades. In any event, where increases in at-task behaviors were demonstrated there were concomitant gains in achievement.

Hoge and Luce (1979) reviewed several studies which investigated the relationship between student at-task behavior and learning. They found that "positive relations between measures of pupil attention and pupil performance appear with some consistency" (p. 486). This finding of their review supports the use of at-task behavior as a mediating variable between teacher behaviors such as teacher enthusiasm

and student achievement.

In the present study, at-task behavior is used as a proximal measure of student learning. If teacher enthusiasm affects student at-task behavior, as expected, this would explain the relationship between teacher enthusiasm and student achievement found in some investigations. The full causal model is as follows:

(1) teacher enthusiasm ⟶ (2) student at-task behavior ⟶ (3) student achievement

Previous researchers have demonstrated causal and correlational links between events 1 and 3, and between events 2 and 3 of the model. The present study attempts to test the causal link between steps 1 and 2 posited by the model.

Further justification for pursuing this line of research was provided recently by Benjamin Bloom (1980), who identified a number of "alterable variables" which facilitate student learning. Among these variables Bloom listed "time-on-task" as opposed to "available time", and "teaching" as opposed to "teachers". He argued that teaching acts and at-task behavior of students are "alterable" under controlled conditions in the classroom. The present study attempts to alter two such behaviors - "teaching" as an independent variable, and "at-task behavior" as a dependent variable - in classroom settings.

Statement of the Problem

The specific research problem in this study was to determine whether training teachers in enthusiasm, using Collins' procedure, would result in increased at-task behavior of students.

Hypotheses

It was hypothesized that:

H_1: Teachers who have received enthusiasm training will show a significantly greater increase in overt level of enthusiasm than will teachers who have not received

enthusiasm training.

H_2: Students taught by teachers trained in enthusiasm will exhibit significantly higher levels of at-task behavior in class than will students taught by teachers untrained in enthusiasm.

H_3: Students taught by teachers trained in enthusiasm will exhibit significantly higher levels of at-task behavior under direct teacher influence than will students taught by teachers untrained in enthusiasm.

H_4: Students taught by teachers trained in enthusiasm will exhibit significantly higher levels of at-task behavior under indirect teacher influence than will students taught by teachers untrained in enthusiasm.

Experimental Design

The experiment followed the Pretest-Posttest Control Group Design described by Campbell and Stanley (1963). The sample consisted of 18 University of Oregon resident teachers and their classes in grades 1 - 6. Teachers were assigned to the experimental group (N = 9) and to the control group (N = 9) through stratified random sampling procedures. Stratification on the basis of grade level was used to ensure an even distribution over lower (1 - 2), middle (3 - 4), and upper (5 - 6) grade levels. On the average there were 21 students (12 boys, 9 girls) in each experimental class and 25 students (13 boys, 12 girls) in each control class. Students came from predominately middle class suburban neighborhoods.

Experimental and control group teachers were videotaped initially conducting a teacher-presented mathematics lesson in their classrooms. Each lesson included teacher exposition and student seatwork. While the lesson was being taught, a trained observer coded pupils' at-task behavior on a five-second interval system.

Mathematics was chosen as the subject matter to be consistent with the methodology of Bettencourt's study; his pre- and post-observations were of mathematics lessons. Also all teachers were instructed to use the same curriculum content area so that differences

in content area selected would not be a factor in influencing teachers' level of enthusiasm. Further uniformity of lesson format was achieved by instructing all teachers to include teacher exposition and student seatwork in their lesson.

All videotapes were made by the researchers. To the extent possible, pretraining and posttraining tapings were scheduled so that experimental and control group subjects were videotaped on alternate days during each two week period. This was done to avoid systematic bias in timing of lessons which may have resulted if all experimental or all control teachers had been videotaped together as a group.

When all the videotaped lessons were done, the experimental group teachers participated in a training intervention similar to the one used by Collins (1976) and Bettencourt (1979). The three phases of the training procedure - exposition and discussion of teacher enthusiasm, peer teaching, and microteaching - were completed over a two week period in Fall Term of 1979.

As soon as the training was completed, all teachers were videotaped a second time, under the same conditions as previously. Also, student at-task data were again recorded during the videotaped lessons.

During the training period the control group teachers continued with their normal teaching duties. They were not involved in the training procedures until after the study was completed. Then they were given the same training as the experimental group teachers.

Two raters were trained to rate the videotapes on the eight indicators of enthusiasm using an instrument designed by Mary Collins (Appendix D). Raters were chosen from a graduate course in educational research at the University of Oregon. Both were doctoral students in curriculum and instruction, had extensive backgrounds in education, and were familiar with various procedures used to observe teacher behaviors. Once inter-rater reliability of .90 was established, each of the trained raters observed and rated all 36 tapes independently over a two week period. Videotapes were rated in a predetermined,

random sequence.

Upon completion of the tape scoring, inter-rater reliability was determined for overall enthusiasm scores and for ratings of each of the eight indicators. The reliability coefficients are presented in Table 1.

Table 1: Inter-rater Reliability for Eight Indicators of Enthusiasm and Overall Emthusiasm Rating

Indicators	Inter-rater Reliability (Product moment r)
Vocal Delivery	.88
Eyes	.90
Gestures	.92
Movement	.90
Facial Expression	.91
Word Selection	.81
Acceptance of Ideas and Feelings	.84
Over-all Energy Level	.96
Overall-all Enthusiasm Rating (Mean of the eight variables listed above)	.95

Ratings of At-task Behavior

While the videotaped lesson was being taught, a trained observer coded pupils at-task behavior on a five-second interval system. Students were numbered for identification on a seating chart prepared by the resident teacher and verified by the observer. A sequence of observation was determined from this seating chart. For each student in turn a symbol was recorded each five seconds to indicate whether the student was at-task (+) or off-task (-). Intervals were regulated by use of an auditory timing device carried by the observer only. Recordings were taken in such a way as to indicate whether the student was under direct or indirect teacher attention at the time of

observation (Appendix F). Direct teacher influence is established when the student is required to focus attention directly on the teacher. indirect teacher influence is established when the student is required to focus attention on some other person or task under the general supervision of the teacher.

Variations in the length of lessons in which at-task data were recorded are presented in Table 2. This table indicates that, on the average, control group lessons were longer than experimental group lessons.

Two observers were trained to assess students' at-task behavior. They were chosen from a course in educational research at the University of Oregon. Both were graduate students in curriculum and instruction, had extensive backgrounds in education, and had worked with students at the elementary level.

Table 2: Average Lesson Length in Minutes

Observation	Experimental $\bar{X}$ (s. d.)	Control $\bar{X}$ (s. d.)
Pretraining	28.75 (6.17)	22.58 (5.25)
Posttraining	30.00 (6.33)	26.00 (4.67)

The raters met with the researcher to discuss at-task behavior and to study the instrumentation to be used. The instrument (Appendix F) was similar to that developed by Rose Marie Campbell (1977). Training was conducted in several classrooms in an elementary school near the University of Oregon.

Upon completion of the training each observer was assigned a number of classes to visit while the videotaped lessons were being presented. At-task behavior was recorded by one observer in each instance. Observers were unaware of which teachers were experimental

group subjects and which were control group subjects.

Student at-task behavior during a lesson was expressed as the ratio of the total number of at-task observations to the total number of observations (at-task plus off-task). Similar measures of at-task behavior under direct tracher influence and under indirect teacher influence were computed.

Results

The data analyses are organized accoring to the four research hypotheses that guided the investigation.

Hypotheses 1

Teachers who have received enthusiasm training will show a significantly higher level of overt enthusiasm than will teachers who have not received enthusiasm training.

Ratings on the eight indicators of teacher enthusiasm were computed for each subject. Four of the nine experimental group teachers showed increased levels of enthusiasm on all indicators. No teacher in the ccntrol group displayed increases across all indicators. The mean gains on the eight indicators ranged from 0.24 to 0.62 for the experimental group teachers, and from -0.32 to -0.01 for the control group teachers. The ratings for each of the eight indicators were summed and divided by eight to derive an overall enthusiasm rating for each teacher. This overall rating was the basic variable used in subsequent analyses.

Table 3 presents experimental and control teachers' mean rating on each enthusiasm indicator before and after training. Experimental group teachers made gains on all indicators as well as on overall enthusiasm. Control group teachers did not make gains on any of the indicators. The data in Table 3 also indicate that all posttraining ratings were higher for experimental group teachers than for control group teachers.

Table 3: Overall Enthusiasm Scores and Subscores for Experimental and Control Group Teachers

Indicator	Experimental (N = 9) Pre $\bar{X}$ (SD)	Experimental (N = 9) Post $\bar{X}$ (SD)	Control (N = 7) Pre $\bar{X}$ (SD)	Control (N = 7) Post $\bar{X}$ (SD)
1. Vocal Delivery	2.62 (.44)	3.06 (.40)	2.63 (.45)	2.50 (.41)
2. Eyes	2.63 (.68)	3.10 (.53)	2.67 (.47)	2.59 (.36)
3. Gestures	1.94 (.65)	2.55 (.85)	1.94 (.55)	1.93 (.44)
4. Movemenrs	2.39 (.42)	2.80 (.52)	2.30 (.36)	2.13 (.35)
5. Facial Expression	2.49 (.60)	2.93 (.74)	2.44 (.39)	2.22 (.59)
6. Word Selection	2.40 (.45)	2.64 (.28)	2.58 (.29)	2.41 (.49)
7. Acceptance of Ideas and Feelings	2.49 (.57)	2.83 (.28)	2.21 (.63)	2.04 (.50)
8. Overall Energy	2.58 (.48)	2.88 (.61)	2.66 (.33)	2.34 (.46)
Overall Enthusiasm Score	2.43 (.48)	2.84 (.56)	2.43 (.34)	2.26 (.39)

A t test computed on the difference between pretraining and posttraining overall enthusiasm ratings for experimental group teachers (2.84 v. 2.43) yielded a value of $t = 1.69$, which is not statistically significant. However, a test of the significance of the difference in posttraining means between the experimental and control groups (2.84 v. 2.26) yielded a t value of 2.57 which is statistically significant ($p < .05$).

Another test of the first research hypothesis was made by comparing the posttraining enthusiasm scores of the two groups, using analysis of covariance with pre-training ratings as the covariate. An initial test was done to determine whether the homogeneity of regression assumption underlying analysis of covariance was satisfied. This test yielded a statistically nonsignificant F value of .82, indicating that the

assumption was satisfied. The results of this analysis appear in Table 4. The between group differences are statistically significant, indicating that experimental group teachers displayed a significantly higher posttraining level of enthusiasm than did control group teachers.

Table 4: Analysis of Convariance on Posttraining Enthusiasm Scores

	MS	df	F	P
Between	1.52	1	6.49	.02
Within	0.23	15		

Hypothesis 2

Students taught by teachers trained in enthusiasm will exhibit a higher level of at-task behavior than will students taught by teachers untrained in enthusiasm.

Ratios of student at-task behavior for both experimental and control groups are presented in Table 5. Experimental classes demonstrated an increase in at-task ratios from pretraining to posttraining. Control group classes showed a decrement in their at-task ratio. The difference between pretraining and posttraining scores for the experimental classes yielded a t value of 3.71, which is statistically significant ($p < .01$). These findings indicate that teachers trained in enthusiasm but not the control teachers brought about statistically significant increases in student at-task behavior.

Table 5: Comparison of At-task Behavior for Experimental and Control Groups

Group	N	Pretraining % $\bar{X}$ (SD)	Posttraining % $\bar{X}$ (SD)	Gain %
Experimental	9	73.38 (10.49)	86.91 (6.54)	13.53
Control	9	78.38 (4.94)	74.13 (8.23)	- 4.25

Another test of Hypothesis 2 was made by comparing the posttraining at-task scores of the two groups, using analysis of covariance with pretest scores as the covariate. A test of the homogeneity of regression assumption yielded a nonsignificant F value of 0.46, indicating that the assumption was satisfied. The results of the analysis of covariance appear in Table 6. These results indicate that the experimental group classes displayed a significantly higher posttraining level of at-task behavior that did control group classes.

Table 6: Analysis of Covariance on Posttraining At-task Ratios

	MS	df	F	P
Between	719.56	1	12.37	.003
Within	58.18	15		

Hypothesis 3

Students taught by teachers trained in enthusiasm will exhibit significantly higher levels of at-task behavior under direct teacher influence than will students taught by teachers untrained in enthusiasm.

Direct teacher influence is established when the student is required to focus attention directly on the teacher. Teacher exposition and monitoring of the seatwork of individual students were the most common forms observed. All groups operated under direct teacher influence for approximately 57 percent of lesson time. Exact percentages are shown in Table 7. These percentages represent the ratio of the number of direct influence observations to total observations per group.

At-task ratios for conditions of direct teacher influence were computed for each class. These ratios, expressed as percentages per group, are presented in Table 8.

The experimental group classes increased in student at-task behavior under direct tracher influence from before to after the

Table 7: Percentages of Lesson Time Under Direct Teacher Influence for Experimental and Control Groups Pretraining and Posttraining

Group	N	Pretraining % $\bar{X}$ (SD)	Posttraining % $\bar{X}$ (SD)
Experimental	9	57.79 (19.44)	58.08 (22.14)
Control	9	54.94 (22.47)	59.69 (21.71)

training period. Control group classes showed only a very slight increase. A comparison of pretraining and posttraining at-task scores for the experimental classes, under conditions of direct teacher influence, yielded a t value of 3.94, which is statistically significant ($p < .01$).

Table 8: Comparison of At-task Behavior Under Direct Teacher Influence for Experimental and Control Groups

Group	N	Pretraining % $\bar{X}$ (SD)	Posttraining % $\bar{X}$ (SD)	Gain %
Experimental	9	76.62 (12.86)	87.17 (8.22)	10.55
Control	9	75.41 (6.89)	76.98 (12.14)	1.57

A further test of Hypothesis 3 was made by comparing posttest ratings for the two groups, using analysis of covariance with pretest scores as the covariate. A test of the homogeneity of regression assumption yielded a nonsignificant F value of 2.87, indicating that the assumption was satisfied. The results of the analysis of covariance appear in Table 9. The experimental group classes displayed significantly greater posttest levels of at-task behavior under direct teacher influence than did control group classes.

Table 9: Analysis of Covariance on Posttraining At-task Ratios for Direct Teacher Influence

	MS	df	F	P
Between	424.74	1	4.31	.05
Within	98.61	15		

Hypothesis 4

Students taught by teachers trained in enthusiasm will exhibit significantly higher levels of at-task behavior under indirect teacher influence than will students taught by teachers untrained in enthusiasm.

Indirect teacher influence is established when the student is required to focus attention on some other person or task under the general supervision of the teacher. The proportions of observations recorded for indirect influence are presented in Table 10. This table indicates that approximately 43 per cent of lesson time was spent under indirect teacher influence.

Table 10: Percentages of Lesson Time Under Indirect Teacher Influence

Group	N	Pretraining % $\bar{X}$ (SD)	Posttraining % $\bar{X}$ (SD)
Experimental	9	40.21 (19.44)	41.92 (22.14)
Control	9	45.06 (22.47)	40.31 (21.71)

At-task ratios for conditions of indirect teacher influence were computed for each class. These ratios are presented in Table 11.

The experimental group classes increased in at-task behavior under indirect tracher influence from before to after the training period. Control group classes decreased. A comparison of pretraining and

posttraining at-task scores for the experimental classes, under conditions of indirect teacher influence yielded a t value of 2.57, which is statistically significant ($p < .05$).

Table 11: Comparisons of At-task Behavior Under Indirect Teacher Influence for Experimental and Control Groups

Group	N	Pretraining % $\bar{X}$ (SD)	Posttraining % $\bar{X}$ (SD)	Gain %
Experimental	9	71.56 (10.23)	85.88 (10.82)	14.32
Control	9	81.51 (5.51)	69.71 (5.33)	-11.80

Analysis of covariance outcomes are not presented for this hypothesis. The initial test of the homogeneity of regression assumption gave an F value of 5.78 which was statistically significant (p .05). However, analysis of the differences between pre-post means supports Hypothesis 4. Classes taught by teachers trained in enthusiasm exhibit significantly higher levels of at-task behavior under indirect teacher influence than do classes taught by teachers who have not been trained in enthusiasm.

Interpretation of Results

Training Effects

Results of this study indicate that teachers who have enthusiasm training show a significantly greater increase in overt level of enthusiasm than teachers who have not received the training. These results replicate the finding of Collins (1976) and Bettencourt (1979) that enthusiasm training is effective in changing teacher behavior. Whereas Collins used preservice teachers as subjects, this study, like that of Bettencourt, used inservice teacher interns. Thus, it appears that the procedures for preservice enthusiasm training developed by Collins can be used successfully with teachers at a slightly further point in their professional careers.

One interesting effect derived from a comparison of the lessons presented during enthusiasm training and those videotaped before and after training. The lessons taught during training offered teachers a choice of subject area. The videotaped lessons of the experiment were restricted to mathematics. Several teachers found it much easier to exhibit the enthusiasm indicators in lessons other than mathematics. This suggests that subsequent research on enthusiasm will need to take curriculum content into account as a possible mediator of training effects.

Student At-task Effects

Two recent reports (Rosenshine & Bloom, 1975; Berliner, 1979) suggest that, under normal circumstances, students in formal elementary classes exhibit at-task behavior for approximately 75 per cent of the time. The pretraining average of at-task ratios for all classes in the present study was 75.8 percent, and the posttraining average for control classes was 74.1 percent. These averages indicate that, in the present study, classes taught by untrained teachers consistently exhibited "normal" levels of at-task behavior. However, in classes taught by enthusiasm trained teachers, students were observed to be at-task for 86.9% of the time in posttraining lessons. This increased level of at-task behavior appears to be the direct result of enthusiasm training received by the students' teachers.

Significant increases in at-task behavior for the experimental classes were demonstrated under both direct teacher influence and indirect teacher influence. The increases under direct tracher influence were the more dramatic (14.32% under indirect influence v. 10.55% under direct influence). This difference could be the result of a transfer of effect of teacher enthusiasm on student behavior from direct influence (teacher exposition) to indirect influence (seatwork). Also, it could be an effect of teacher monitoring of student seatwork. It was observed that all experimental teachers and six of the nine control group teachers monitored student performance during seatwork. The three classes where monitoring did not occur recorded the lowest ratings on at-task behavior under direct influence in posttraining observations. This evidence suggests that higher levels of at-task

behavior demonstrated during seatwork probably were caused by some combination of teacher enthusiasm effects and teacher monitoring of seatwork.

Secondary analyses of the data indicate significant effects of teacher enthusiasm training on the at-task behavior of both boys and girls. Also, the results indicate that girls in the elementary school are more attentive to their tasks than are boys. The same conclusion was reached by Samuels and Turnure (1974) who found first grade girls to be significantly more attentive than first grade boys. In both their study and the present study the magnitude of difference between girls and boys at-task behavior was approximately 8 percent.

Another finding of the secondary analyses is that students estimated by their teachers to be high in academic ability were more at-task in the pretraining observation than were students estimated to be low in academic ability. However, during the posttraining observation, low ability students of trained teachers were more at-task than were high ability students in the control group. This finding suggests that teacher enthusiasm can compensate for the initial disparity in levels of at-task behavior between high and low ability students. One possible explanation of this outcome is suggested by the data. High ability students in control classes demonstrated significant decreases in at-task behavior over time in the absence of overt teacher enthusiasm. At the same time, low ability students in the experimental group increased their at-task behavior in the presence of overt teacher enthusiasm. This suggests that the effect is a composite of increases for low ability experimental students and decreases for high ability control students.

Recommendations for Future Research

Collins' procedures for enthusiasm training have been demonstrated to be effective for preservice teachers and for intern teachers. It seems likely that the same procedures would be effective as well for experienced classroom teachers, but this prediction needs to be empirically checked. The present study could be replicated using experienced teachers as subjects. If the training model can be shown

to produce significant effects for classroom teachers with several years of experience, it could become a useful instrument for the revitalization of teachers in the field.

The causal model presented earlier posits three events:

1. teacher enthusiasm
2. student at-task behavior
3. student achievement

and links between them that define a path from specific teacher behavior to desired student outcome. Collins demonstrated that the first event (teacher enthusiasm) can be experimentally modified. The present study demonstrates a causal link between the first two events, teacher enthusiasm and student at-task behavior. Several other studies have linked the second and third events, student at-task behavior and student achievement.

Bettencourt attempted to demonstrate a causal link between the first event (teacher enthusiasm) and the third event (student achievement), but was not successful. One possible reason for this lack of effect was the nature of the instructional module used in the study. Bettencourt argued that the module itself probably exerted a sufficiently strong positive influence in all students to offset the lower levels of overt enthusiasm displayed by control group teachers. He recommends "that this study be replicated using a controlled instructional unit that relies primarily on teacher presentation for the teaching of concepts and motivation of students" (1979, p. 67). Consequently, it would seem desirable to conduct research testing the full causal model involving teacher enthusiasm, student at-task behavior, and student achievement. This research would incorporate the methodologies of Bettencourt's study and the present study, but taking into account the recommendations of Bettencourt concerning the design of the experimental module.

Rosenshine and Berliner (1978) recommend that "learning how to increase academic engaged time in settings where students are working alone without supervision should be a major objective for future

research" (p. 9). The present study indicates that the effects of teacher enthusiasm in exposition, when linked with teacher monitoring of seatwork, influence student behavior during independent activities subsequent to the exposition. This aspect of the study should be investigated more closely. The extent to which teacher enthusiasm, without teacher monitoring of seatwork, influences students' engagement in independent learning tasks should be the focus of subsequent study. Effects of training in teacher enthusiasm need to be studied over longer periods of time than the time interval used in the present study. Collins investigated effects on teacher behavior three weeks after training. But there is a need to investigate effects on both teachers and students over, say, 3-6 months, or even a school year. Questions to be answered focus on whether trained teachers maintain appropriate levels of enthusiasm over time, and whether their students maintain high levels of at-task behavior over time.

The present study indicates that student at-task behavior was increased as a result of increased overt teacher enthusiasm. However, there may be other teacher behaviors which could produce the same effect. Perhaps training in other skills (e.g., questioning) or the adoption of altered teaching styles (e.g., direct instruction) would produce the same or superior effect.

Implications for Teacher Education

Teacher enthusiasm is widely considered to be an essential attribute of effective teaching. Although the findings are not consistent, enthusiasm appears to promote student achievement. It has now been found in the present study that enthusiasm positively affects student at-task behavior. This finding reaffirms the importance of teacher enthusiasm in promoting student learning outcome.

Given the amount of evidence linking teacher enthusiasm to important student outcomes, enthusiasm training should be considered for inclusion in teacher education. Recent research has indicated that enthusiasm training is effective for preservice and intern teachers. Probably it would be similarly useful to experienced teachers. The

enthusiasm training procedure developed by Collins and validated by her and by Bettencourt and the present researchers presents a suitable model for use in both preservice and inservice teacher education.

Teacher evaluation sometimes includes assessment of enthusiasm. The rating scales used to observe the eight indicators of enthusiasm could be used for these evaluations. For example, administrators might use the scales, or adapt them, to direct their evaluations of individual teachers. Also, supervisors of preservice teachers could perform evaluations and make suggestions for improvement of teaching on the basis of evidence recorded on these measures.

In a recent discussion of generic and specific teaching behaviors, Gage (1979) identified only two teaching behaviors that are purely generic in that they are suitable for teaching all subject areas, all grade levels and all types of students. One of these behaviors is enthusiasm, the other is the ability to generate appropriately high levels of student engaged time. The present study demonstrates an effective set of procedures for training teachers to convey enthusiasm. The study also indicates that teachers who are trained to convey enthusiasm generate appropriately high levels of student at-task behavior. It would seem, then, that these training procedures should be considered for inclusion in teacher education programs because they lead to the development of two highly generalized instructional competencies.

APPENDIX A

INDICATORS OF HIGH TEACHER ENTHUSIASM

1.	Vocal Delivery	rapid, excited, speech varied, lilting, uplifting intonations; great and sudden changes in tone, pitch
2.	Eyes	dancing, snapping, shining, lighting up, open wide
3.	Gestures	frequent demonstrative movements of the body, head, arms, hands, and face
4.	Movements	large body movements, swings around, changes pace, bends body
5.	Facial Expression	changes denoting surprise, sadness, joy, thoughtfulness, awe
6.	Word Selection	highly descriptive, many adjectives, great variety
7.	Acceptance of Ideas/Feelings . .	quickly with vigor and animation, ready to accept, praise, encourage or clarify in non-threatening manner
8.	Over-all Energy Level	explosive, exuberant

APPENDIX B

PEER TEACHING OBSERVER-RATING SHEET

(X) Place an X in the appropriate column:

Indicators	Low	Medium	High	Comments
1. Vocal				
2. Eyes				
3. Gestures				
4. Movements				
5. Facial Expression				
6. Word Selection				
7. Acceptance of Ideas & Feelings				
8. Over-all Energy Level				

APPENDIX C

DESCRIPTORS FOR THE EIGHT VARIABLES THAT CONVEY ENTHUSIASM

	1 Low	2	3 Medium	4	5 High
1. Vocal Delivery	Monotone voice, minimum vocal inflection, little variations in speech, drones on and on and on, poor articulation.		Pleasant variations of pitch, volume and speed, good articulation.		Great and sudden changes from rapid, excited speech to a whisper. Varied lilting, uplifting, intonation. Many changes in pitch.
2. Eyes	Looked dull or bored. Seldom opened eyes wide or raised eyebrows.		Appeared interested. Some changes, no lighting up, shining, opening wide.		Characterized as dancing, snapping, shining, lighting up, frequently opening wide, eyebrows raised.
3. Gestures	Seldom moved arms out or outstretched toward person or object. Never used sweeping movements, kept arms at side or folded across body, appeared rigid.		Often pointed with hand, using total arm. Occasionally used sweeping motion using body, head, arms, hands and face. Steady pace of gesturing is maintained.		Quick and demonstrative movements of body, head, arms, hands, and face, i.e., sweeping motions, clapping hands, head nodding rapidly.
4. Body Movements	Seldom moved from one spot, or movement mainly from a sitting position to a standing position.		Moved freely, slowly, and steadily		Large body movements, swung around, walked rapidly, changed pace, unpredictable, energetic.

DESCRIPTORS FOR THE EIGHT VARIABLES THAT CONVEY ENTHUSIASM (cont.)

	1 Low	2	3 Medium	4	5 High
5. Facial Expression	Appeared deadpan, does not denote feeling or frowned most of the time. Little smiling or a one-second lips up-turned. Lips closed		Agreeable, smiled frequently and longer plus at a regular rate. Looked pleased, happy, sad when obviously called for.		Appeared vibrant, demonstrative, showed surprise, awe, sadness, joy, thoughtfulness, excitement. Total smile--mouth opened wide, quick and sudden changes in expression.
6. Word Selection	Mostly nouns, few descriptors/adjectives.		Some descriptors/adjectives or repetition of the same ones.		High descriptive, many adjectives, great variety.
7. Acceptance of Ideas and Feelings	Little indication of acceptance or encouragement, may ignore student's feelings and ideas.		Accepts ideas and feelings, praises or clarifies, some variations in response but frequently repeats same ones.		Quick and ready to accept praise, encourage or clarify, many variations in response. Vigorous nodding of head when agreeing.
8. Over-all Energy Level	Lethargic, appeared inactive, dull or sluggish.		Some variations from high to low in appearing energetic, demonstrative but mostly an even level is maintained.		Exuberant. Maintained high degree of energy and vitality, highly demonstrative, great and sudden changes in voice, tone, pitch; eye, head, arm, and body movements.

APPENDIX D

RATER'S TALLY SHEET ON TEACHER ENTHUSIASM

Name of Rater _____ Code # of Tape _____

Interval	Vocal Delivery	Eyes	Gestures	Movements	Facial Expression	Word Selection	Acceptance of Ideas & Feelings	Over-all Energy Level
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
Total								
Mean								

5 high enthusiasm conveyed

4

3 medium enthusiasm conveyed

2

1 low enthusiasm conveyed

APPENDIX E

COMPARISONS OF EXPERIMENTAL GROUP PRE/POST TRAINING SCORES ON THE EIGHT ENTHUSIASM INDICATORS AND OVERALL ENTHUSIASM SCORES

Experimental Group Teacher	Vocal Delivery	Eyes	Gestures	Movement	Facial Expression	Word Selection	Acceptance of Ideas & Feelings	Overall Energy	Overall Enthusiasm Score
1.									
Pre	1.75	1.60	1.10	2.10	1.75	1.45	1.95	2.10	1.72
Post	3.67	4.11	4.06	3.62	3.95	3.00	3.45	4.00	3.73
2.									
Pre	2.94	2.60	2.38	2.83	2.69	2.44	2.31	3.00	2.65
Post	3.65	3.40	3.15	3.10	2.65	3.00	2.75	3.00	3.21
3.									
Pre	2.80	2.80	2.25	2.40	2.60	2.60	2.40	2.85	2.59
Post	2.50	2.50	1.25	2.65	2.00	2.25	2.40	2.15	2.21
4.									
Pre	3.25	3.90	3.05	3.25	3.75	3.05	3.70	3.45	3.40
Post	3.06	3.55	3.20	3.25	3.75	2.55	2.83	3.30	3.40
5.									
Pre	2.80	2.70	2.20	1.90	2.60	2.60	2.90	2.35	2.51
Post	2.55	2.70	2.50	2.60	2.50	2.30	2.95	2.70	2.60
6.									
Pre	2.70	2.85	2.10	2.40	2.25	2.35	2.45	2.10	2.40
Post	3.00	3.20	2.35	2.85	3.10	2.80	2.70	2.95	2.87

COMPARISONS OF EXPERIMENTAL GROUP PRE/POST TRAINING SCORES ON THE EIGHT ENTHUSIASM INDICATORS AND OVERALL ENTHUSIASM SCORES (cont.)

Experimental Group Teacher	Vocal Delivery	Eyes	Gestures	Movement	Facial Expression	Word Selection	Acceptance of Ideas & Feelings	Overall Energy	Overall Enthusiasm Score
7.									
Pre	2.73	2.95	1.89	2.22	2.73	2.73	2.73	2.73	2.59
Post	3.00	3.05	2.65	2.80	2.90	2.80	2.65	2.90	2.84
8.									
Pre	2.45	2.49	1.25	2.40	2.20	2.30	2.10	2.60	2.23
Post	3.06	2.55	1.65	1.75	1.95	2.55	2.83	1.90	2.28
9.									
Pre	2.20	1.75	1.20	2.00	1.80	2.05	1.85	2.00	1.81
Post	3.05	2.85	2.15	2.55	2.55	2.50	2.90	3.00	2.69
Pretraining Means	2.62	2.63	1.94	2.39	2.49	2.40	2.49	2.58	2.43
Posttraining Means	3.06	3.10	2.55	2.80	2.93	2.64	2.83	2.88	2.84

COMPARISONS OF EXPERIMENTAL GROUP PRE-POST TRAINING SCORES ON THE EIGHT ENTHUSIASM INDICATORS AND OVERALL ENTHUSIASM SCORES (cont.)

Control Group Teacher	Vocal Delivery	Eyes	Gestures	Movement	Facial Expression	Word Selection	Acceptance of Ideas & Feelings	Overall Energy	Overall Enthusiasm Score
10.									
Pre	2.10	1.90	1.30	2.55	2.10	2.90	1.85	2.35	2.14
Post	2.55	2.43	2.05	2.15	2.40	2.80	2.90	2.50	2.47
11.									
Pre	2.68	2.62	1.15	2.45	2.70	2.69	1.69	2.70	2.33
Post	2.80	2.75	1.75	2.65	2.70	2.85	1.75	2.95	2.53
12.									
Pre	3.00	2.70	2.25	2.15	2.35	2.70	2.05	2.95	2.52
Post	2.48	2.10	1.70	1.55	1.40	2.40	1.79	1.85	1.91
13.									
Pre	2.70	2.60	2.20	2.30	2.10	2.35	2.15	2.65	2.38
Post	2.48	2.75	2.55	2.20	2.30	2.40	1.79	2.00	2.31
14.									
Pre	2.50	2.93	2.15	2.29	2.00	2.50	2.29	2.79	2.43
Post	2.15	2.48	1.55	1.65	1.90	2.10	1.95	1.90	1.96
15.									
Pre	1.75	1.95	1.35	1.75	2.10	1.95	1.10	1.95	1.74
Post	1.65	2.00	1.25	2.10	1.25	1.30	1.30	1.95	1.63

COMPARISONS OF EXPERIMENTAL GROUP PRE-POST TRAINING SCORES ON THE EIGHT ENTHUSIASM INDICATORS AND OVERALL ENTHUSIASM SCORES (cont.)

Control Group Teacher	Vocal Delivery	Eyes	Gestures	Movement	Facial Expression	Word Selection	Acceptance of Ideas & Feelings	Overall Energy	Overall Enthusiasm Score
16.									
Pre	3.10	3.05	2.50	2.80	2.80	2.65	2.95	3.00	2.86
Post	3.00	2.95	2.10	2.15	2.70	2.65	2.75	2.80	2.64
17.									
Pre	3.00	3.25	1.90	1.80	3.00	2.75	3.05	2.90	2.71
Post	2.90	3.05	2.25	2.50	3.00	2.35	2.00	2.95	2.62
18.									
Pre	2.81	3.00	2.63	2.63	2.81	2.75	2.75	2.63	2.75
Post	2.45	2.79	2.20	2.25	2.30	2.80	2.15	2.15	2.38
Pretraining Means	2.63	2.67	1.94	2.30	2.44	2.58	2.21	2.66	2.43
Posttraining Means	2.50	2.59	1.93	2.13	2.22	2.41	2.04	2.34	2.26

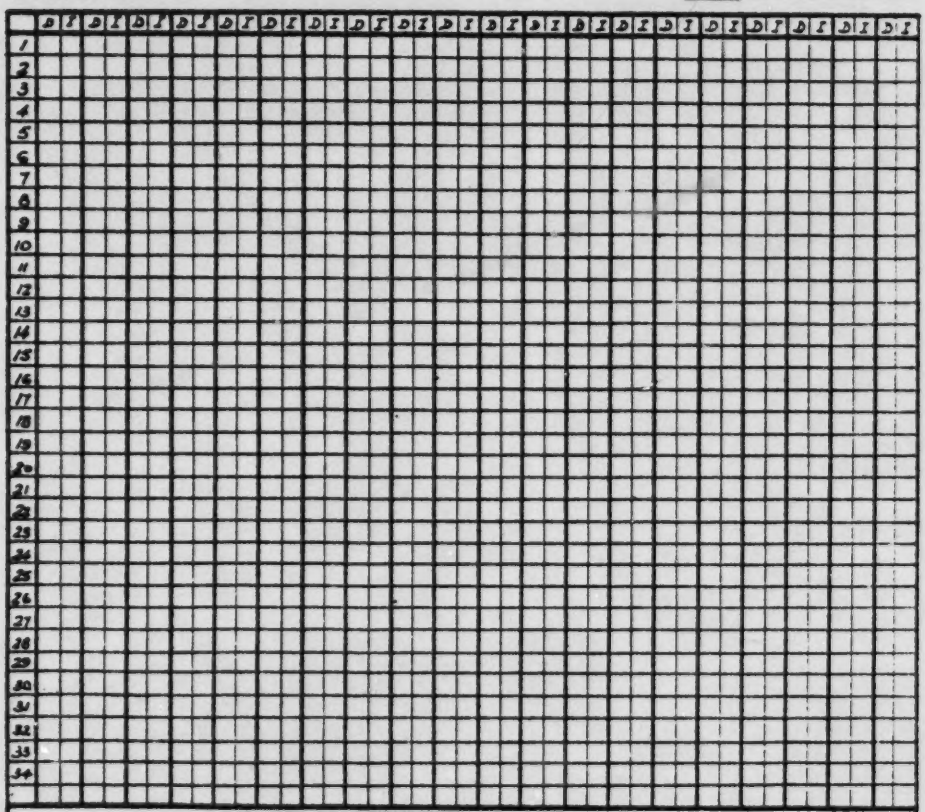
APPENDIX F

AT-TASK RATING SHEET

LESSON: _____
SCHOOL: _____
GRADE : _____

CODE: D = Direct teacher influence
I = Indirect teacher influence
✓ = Student at-task
- = Student off-task

CODE NUMBER: _____
OBSERVER: _____
DATE: _____


D I D I D I

BIBLIOGRPAHY

Anderson, L. W. Time and school learning. Unpublished doctoral dissertation, University of Chicago, 1973.

Anderson, L. W. Student involvement in learning and school achievement. California Journal of Educational Research, 1975, 2, 53-62.

Anderson, L. W. A measure of student involvement in learning: Time-on-task. Resources in Education, 1976, 11(1).

Anderson, L. W., & Scott, C. C. The relationship among teaching methods, students characteristics, and student involvement in learning. Journal of Teacher Education, 1978, XXIX(3), 52-57.

Arlin, M. N. Learning rate and learning rate variance under mastery learning conditions. Unpublished doctoral dissertation, University of Chicago, 1973.

Ausubel, D. P. How reversible are the cognitive and motivational effects of cultural deprivation? Implications for teaching the culturally deprived child. Urban Education, 1964, 19.

Ayllon, T., Layman, D., & Burke, S. Disruptive behavior and reinforcement of academic performance. The Psychological Record, 1972, 22, 315-323.

Ayllon, T., & Roberts, M. D. Eliminating discipline problems by strengthening academic performance. Journal of Applied Behavior Analysis, 1974, 7, 71-76.

Barr, A. S. The measurement and prediction of teaching efficiency: A summary of investigations. Journal of Experimental Education, June 1948, XVI, 203-283.

Barr, A. S., & Emans, L. What qualities are prerequisite to success in teaching? Nation's Schools, 1930, VI, 60-64.

Berliner, D. C. A status report on the study of teacher effectiveness. Journal of Research in Science Teaching, 1976, 13(4), 369-382. (a)

Berliner, D. C. Impediments to the study of teacher effectiveness. Journal of Teacher Education, 1976, XXVII(1), 5-13. (b)

Berliner, D. C. Tempus educare. In P. L. Peterson & H. J. Walberg (Eds.), Research on teaching. Berkeley: McCutchan, 1979, 120-135.

Berliner, D. C., & Tikunoff, W. J. The California beginning teacher evaluation study: Overview of the ethnographic study. Journal of Teacher Education, 1976, XXVII(1), 24-30.

Bettencourt, E. M. Effects of training teachers in enthusiasm on student achievement and attitudes. Unpublished doctoral dissertation, University of Oregon, 1979.

Biddle, B. J., & Ellena, W. J. Contemporary research on teacher effectiveness. New York: Holt, Rinehart and Winston, 1964.

Bloom, B. S. Time and learning. American Psychologist, Sept. 1974, 29(9), 682-688.

Bloom, B. S. Human characteristics and school learning. New York: McGraw-Hill, 1976.

Bloom, B. S. The new direction in educational research: Alterable variables. Phi Delta Kappan, 1980, 61(6), 382-385.

Borg, W. R. & Gall, M. D. Educational research: An introduction. New York: Longman, 1979.

Brophy, J. Reflections on research in elementary schools. Journal of Teacher Education, 1976, XXVII(1), 31-34.

Brophy, J. E. & Evertson, C. M. Learning from teaching: A developmental perspective. Boston: Allyn and Bacon, 1976.

Campbell, D., & Stanley, J. Experimental and quasi-experimental designs for research. Chicago: Rand McNally Co., 1963.

Campbell, R. M. Beginning reading, time on task, and teacher involvement. Unpublished doctoral dissertation, University of Oregon, 1977.

Carroll, J. B. A model of school learning. Teachers' College Record, May 1963, 64(8), 723-733.

Coats, W., & Smidchens, U. Audience recall as a function of speaker dynamism. Journal of Educational Psychology, 1966, 189-191.

Cobb, J. A. Survival skills and first grade achievement (Report No. 1). Eugene: Center at Oregon for Research in the Behavioral Education of the Handicapped, University of Oregon, December, 1970.

Cobb, J. A. Relationship of discrete classroom behavior to fourth grade academic achievement. Journal of Educational Psychology, 1972, 63, 74-80.

Cobb, J. A., & Hops, H. Effects of academic survival skill training on low achieving first graders. Journal of Educational Research, 1973, 67, 108-113.

Coleman, J. S. et al. Equality of educational opportunity. Washington, D.C.: U.S. Government Printing Office, 1966.

Collins, M. L. The effects of training for enthusiasm on the enthusiasm displayed by preservice elementary teachers (Doctoral dissertation, Syracuse University, 1976). Dissertation Abstracts International, 1977, 37A, 7083A-7084A. (University Microfilms No. 77-9849, 143)

Collins, M. L. Effects of enthusiasm training on preservice elementary teachers. Journal of Teacher Education, 1978, XXIX, 53-57.

Cruickshank, D. Synthesis of selected recent research on teacher effects. Journal of Teacher Education, 1976, XXVII(1), 57-60.

Davidson, H. H., & Lang, G. Children's perceptions of teachers' feelings towards them related to self-perception, school achievement, and behavior. Journal of Experimental Education, 1960, 29, 107-118.

Doyle, W. Paradigms for research on teacher effectiveness. Review of Research in Education, 1977, 5, 163-197.

Dunkin, M. J., & Biddle, B. J. The study of teaching. New York: Holt, Rinehart, and Winston, 1974.

Ebel, R. L. The failure of schools without failure. Phi Delta Kappan, 1980, 61(6), 386-400.

Edwards, A. Experimental design in psychological research. New York: Holt, Rinehart and Winston, 1950.

Ehrensberger, R. An experimental study of the relative effectiveness of certain forms of emphasis in public speaking. Speech Monographs, 1945, 12, 94-111.

Eisner, E. W. Qualitative intelligence and the act of teaching. In R. T. Hyman (Ed.), Teaching: Vantage points for study. New York: Lippincott, 1974, 359-368.

Fenstermacher, G. D. The value of research on teaching for teaching skill and teaching manner. Paper presented at the annual meeting of the American Educational Research Association, Boston, April, 1980.

Ferritor, D. C., Buckholdt, D., Hamblin, R. L., & Smith, L. The noneffects of contingent reinforcement for attending behavior on work accomplished. Journal of Applied Behavior Analysis, 1972, 5, 7-18.

Fisher, C. W., & Berliner, D. C. Clinical inquiry in research on classroom teaching and learning. Journal of Teacher Education, 1979, XXX(6), 42-48.

Fisher, C. W., Filby, N. A., Marliave, R., Cahen, L. S., Dishaw, M. M., Moore, J. E., & Berliner, D. C. Teaching behaviors, academic learning time, and student achievement: Final Report of Phase III-B, beginning teacher evaluation study (Technical Report V-1). San Francisco, Far West Laboratory for Educational Research and Development, 1978.

Fortune, J. A. A study of the generality of presenting behavior in teaching. Memphis, Tenn.: Memphis University, 1967.

Gage, N. L. Handbook of research on teaching. Chicago: Rand McNally, 1963.

Gage, N. L. Teacher effectiveness and teacher education. Palo Alto, California: Pacific Books, 1972.

Gage, N. L. A factorially designed experiment on teacher structuring, soliciting, and reacting. Journal of Teacher Education, 1976, XXVII(1), 35-38.

Gage, N. L. The scientific basis of the art of teaching. New York: Teachers' College Press, 1978.

Gage, N. L. The generality of dimensions of teaching. In P. L. Peterson & H. J. Walberg (Eds.), Research on teaching. Berkeley: McCutchan, 1979, 264-288.

Gage, N. L., & Berliner, D. C. Educational psychology. Chicago: Rand McNally, 1979.

Gage, N. L., & Winne, P. H. Performance-based teacher education. In K. Ryan (Ed.), Teacher education, Chicago: N.S.S.E., 1975.

Galloway, C. M. Nonverbal communication in teaching. In R. T. Hyman, (Ed.), Teaching: Vantage points for study. New York: Lippincott, 1974, 395-403.

Gaugher, P. W. The effect of gesture and the presence or absence of the speaker on the listening comprehension of eleventh and twelfth grade high school pupils. Unpublished doctoral dissertation, University of Wisconsin, 1951.

Glass, G. V., & Stanley, J. C. Statistical methods in education and psychology. Englewood Cliffs, N.J.: Prentice-Hall, 1970.

Good, T., Biddle, B., & Brophy, J. Teachers make a difference. New York: Holt, Rinehart and Winston, 1975.

Greenwood, C. R., Hops, H., & Walker, H. The program for academic survival skills (PASS): Effects on student behavior and achievement. Journal of School Psychology. 1977, 15(1), 25-35.

Greenwood, C., Nicholes, J., & Hops, H. PASS observer training manual. Eugene: Center at Oregon for Research in the Behavioral Education of the Handicapped, University of Oregon, June 1974.

Hahn, M., & MacLean, M. Nonverbal communication. In R. T. Hyman (Ed.), Teaching: Vantage points for study. New York: Lippincott, 1974, 428.

Hamachek, D. E. Behavior dynamics in teaching, learning, and growth, Boston: Allyn & Bacon, 1975.

Harris, T., & Yinger, R. Time. Conference Series No. 1. Current Directions in Research on Teaching. East Lansing: Michigan State University, Sept. 1977.

Hay, W. M., Hay, L. R., & Nelson, R. O. Direct and collateral changes in on-task and academic behavior resulting from on-task versus academic contingencies. Behavior Therapy, 1977, 8, 431-441.

Heath, R. W., & Nielson, M. A. Performance based teacher education. Review of Educational Research, 1974, 44, 463-484.

Hoge, R. D., & Luce, S. Predicting academic achievement from classroom behavior. Review of Educational Research, 1979, 49(3), 479-496.

Hops, H., & Cobb, J. A. Initial investigation into academic survival skill training, direct instruction, and first grade achievement. Journal of Educational Psychology, 1974, 66, 548-553.

Hops, H., Greenwood, C., & Nicholes, J. PASS observation system: Reliability, stability, validity, and normative data. Paper presented at APA annual meeting, September, 1975, Chicago, Illinois.

Hudgins, B. B. Attending and thinking in the classroom. Psychology in the Schools, 1967, 4, 211-216.

Hyman, R. T. (Ed.). Teaching: Vantage points for study. New York: Lippincott, 1974.

Jencks, C. S. The Coleman report and the conventional wisdom. In F. Mosteller & D. P. Moynihan (Eds.), On equality of educational opportunity, New York: Random House, 1972.

Jersild, A. T. Modes of emphasis in public speaking. Journal of Applied Psychology, 1928, 12, 611-620.

Kerlinger, F. N. Foundations of behavioral research. New York: Holt, Rinehart, and Winston, 1964.

Kerlinger, F. N. Behavioral research: A conceptual approach. New York: Holt, Rinehart, and Winston, 1979.

Kirby, R. D., & Shields, F. Modification of arithmetic response rate and attending behavior in a seventh grade student. Journal of Applied Behavior Analysis, 1972, 5, 79-84.

Koch, R. Nonverbal observables. In R. T. Hyman, Teaching: Vantage points for study. New York: Lippincott, 1974, 425-438.

Kounin, J. S. Discipline and group management in classrooms. New York: Holt, Rinehart, and Winston, 1970.

Kounin, J. S., & Doyle, P. H. Degree of continuity of a lesson's signal system and task involvement of children. Journal of Educational Psychology, 1975, 67, 159-164.

Kuhn, Thomas S. The structure of scientific revolutions. Chicago: The University of Chicago Press, 1970.

Lahaderne, H. M. Attitudinal and intellectual correlates of attention: A study of fourth-grade classrooms. Journal of Educational Psychology, 1968, 59, 320-324.

Lamke, T. A. Personality and teaching success. Journal of Experimental Education, 1951, 20, 217-259.

Marliave, R. Beyond engaged time: Approximations of task appropriateness in terms of ongoing student learning behaviors. Paper presented at the annual meeting of the American Educational Research Association, Boston, April 1980.

Mastin, V. Teacher enthusiasm. Journal of Educational Research, 1963(7). LVI, 385-386.

McCoard, W. B. Speech factors as related to teaching efficiency. Speech Monographs, 1944, 11, 53-64.

McDonald, F. J. Report on phase II of the beginning teacher evaluation study. Journal of Teacher Education, 1976, 1, 39-42.

McKinney, J. D., Mason, J., Perkerson, K., & Clifford, M. Relationship between classroom behavior and academic achievement. Journal of Educational Psychology, 1975, 67(2), 198-203.

Medley, D. M., & Mitzel, H. E. A technique for measuring classroom behavior. Journal of Educational Psychology, 1948, XLIX, 86-92.

Medley, D. M., & Mitzel, H. E. Some behavioral correlates of teacher effectiveness. Journal of Educational Psychology, 1959, L, 239-246.

Medley, D. M., & Mitzel, H. E. Measuring classroom behavior by systematic observation. In N. L. Gage (Ed.), Handbook of research on teaching. Chicago: Rand-McNally & Co., 1963, 247-328.

Meyers, C. E., Atwell, A. A., & Orpet, R. E. Prediction of fifth grade achievement from kindergarten test and rating data. Educational and Psychological Measurement, 1968, 28, 457-463.

Mitzel, H. E. A behavioral approach to the assessment of teacher effectiveness. New York: Division of Teacher Education, College of the City of New York, 1957. (Mimeographed)

Mitzel, H. E. Teacher effectiveness. In Chester W. Harris, (Ed.), Encyclopedia of educational research (3rd ed.). New York: Macmillan, 1960, 1481-1486.

Mohan, M., & Hull, R. E. Teaching effectiveness: Its meaning, assessment, and improvement. New Jersey: Educational Technology Publications, 1975.

Mood, A. Do teachers make a difference? Report on Recent Research of Pupil Achievement. Washington, D.C.: U.S. Government Printing Office, 1970.

Moskowitz, G., & Hayman, J. L. Interaction patterns of first year, typical, and "best" teachers in inner city schools. Journal of Educational Research, Jan. 1974, 67(5), 224-230.

Mosteller, F., & Moynihan, D. P. (Eds.). On equality of educational opportunity. New York: Random House, 1972.

Ozcelik, D. A. Student involvement in the learning process. Unpublished doctoral dissertation, University of Chicago, 1973.

Packard, R. G. The control of "classroom attention": A group contingency for complex behavior. Journal of Applied Behavior Analysis, 1970, 3(1), 13-28.

Peterson, P. L., & Walberg, H. J. (Eds.). Research on teaching--concepts, findings, and implications. Berkeley: McCutchan, 1979.

Rosencranz, H. A., & Biddle, B. J. The role approach to teacher competence. In B. J. Biddle & W. J. Ellena, Contemporary research on teacher effectiveness. New York: Holt, Rinehart, and Winston, 1964, 232.

Rosenshine, B. Objectively measured behavioral predictors of effectiveness in explaining. In N. L. Gage et al. (Eds.), Explorations of the teacher's effectiveness in explaining, Technical Report No. 4. Stanford, Calif.: Stanford Center for Research and Development in Teaching, School of Education, Stanford University, 1968, 36-45.

Rosenshine, B. Enthusiastic teaching: A research review. School Review, August 1970, 499-514.

Rosenshine, B. Teaching behaviors and student achievement. London: National Foundation for Educational Research, 1971.

Rosenshine, B. Recent research on teaching behaviors and student achievement. Journal of Teacher Education, 1976, XXVII(1), 61-64.

Rosenshine, B. V. Content, time, and direct instruction. In P. L. Peterson & H. J. Walberg, Research on Teaching. Berkeley: McCutchan, 1979, 28-56.

Rosenshine, B., & Berliner, D. C. Academic engaged time. British Journal of Teacher Education, 1978, 4, 3-16.

Rosenshine, B., & Furst, N. Research on teacher performance criteria. In B. O. Smith (Ed.), Research in teacher education: A symposium. Englewood Cliffs, New Jersey: Prentice Hall, 1971.

Ryan, K. (Ed.). Teacher education. The seventy-fourth yearbook of the National Society for the Study of Education. Chicago: N.S.S.E., 1975.

Ryans, D. G. Characteristics of teachers. Washington, D.C.: American Council of Education, 1960.

Ryans, D. G. Assessment of teacher behavior and instruction. Review of Educational Research, 1963, 33, 415-441.

Samuels, S. J., & Turnure, J. E. Attention and reading achievement in first-grade boys and girls. Journal of Educational Psychology, 1974, 66, 29-32.

Seaberg, D. I., & Zinsmaster, W. M. What can teachers learn from directors in the performing arts? In R. T. Hyman (Ed.), Teaching: Vantage points for study. New York: Lippincott, 1974, 381-389.

Shulman, L. S. (Ed.). Review of research in education. Itaska, Illinois: F. E. Peacock, 1979.

Smith, B. O. (Ed.). Research in teacher education. Englewood Cliffs, N. J.: Prentice-Hall, 1971.

Snow, R. E. Representative and quasi-representative designs for research on teaching. Review of Educational Research, 1974, 44(3), 265-291.

Soar, R. Teacher behavior related to pupil growth. International Review of Education, 1972, 18, 508-526.

Solomon, D. Teacher behavior dimensions, course characteristics and student evaluation of teachers. American Educational Research Journal, 1966, III, 35-47.

Solomon, D., Bezdek, W. E., & Rosenberg, L. Teaching styles and learning. Chicago: Center for the Study of Liberal Education for Adults, 1963.

Stallings, J. A., & Kaskowitz, D. H. Follow through classroom observation evaluation, 1972-1973. Menlo Park, Cal.: Stanford Research Institute, 1974.

Strang, R. Nonverbal observables. In R. T. Hyman, Teaching: Vantage points for study. New York: Lippincott, 1974, 428.

Sulzer, B., Hunt, S., Ashby, E., Koniarski, C., & Krams, M. Increasing rate and percent correct in reading and spelling in a fifth grade public school class of slow readers by means of a token system. In E. P. Ramp & B. C. Hopkins (Eds.), A new direction for education: Behavior analysis. Lawrence, Kansas: University of Kansas, 1971.

Tikunoff, W. J., Berliner, D. C., & Rist, R. C. An ethnographic study of the forty classrooms of the beginning teacher evaluation study, Technical Report No. 75-10-5. San Francisco: Far West Laboratory for Educational Research and Development, 1975.

Unruh, W. R. The modality and vitality of cues to lecture effectiveness. In N. L. Gage et al. (Eds.), Explorations of the teacher's effectiveness in explaining. Technical Report No. 4. Stanford, Calif.: Stanford Center for Research and Development in Teaching, School of Education, Stanford University, 1963, 21-34.

Walker, H., & Hops, H. Increasing academic achievement by reinforcing direct academic performance and/or facilitative nonacademic responses. Journal of Educational Psychology, 1976, 68(2), 218-225.

Wallen, N. E. Relationship between teacher characteristics and student behavior: Part II. Washington, D.C., U.S. Office of Education, 1966.

Wallen, N. E., & Wodtke, K. H. Relationships between teacher characteristics and student behavior: Part I. Washington, D.C.: U.S. Office of Education, 1963.

Webster, M. New international dictionary of the English language. Springfield, Mass.: Merriam, 1961.

Wiley, D. E. Another hour, another day: Quantity of schooling, a potent path for policy. Studies of Educative Processes, No. 3, University of Chicago, 1973.

Wiley, D. E., & Harnischfeger, A. Explosion of a myth: Quantity of schooling and exposure to instruction, major educational vehicles. Educational Researcher, 1974, 3(4), 7-12.

Winett, R. A., & Winkler, R. C. Current behavior modification in the classroom: Be still, be quiet, be docile. Journal of Applied Behavior Analysis, 1972, 5, 499-504.

Woolbert, Charles. Effects of modes of public reading. Journal of Applied Psychology, 1920, 4, 162-185.

Wyckoff, W. L. The effect of stimulus variation on learning from lecture. Journal of Experimental Education, 1973, XLI, 85-96.